

USSR/Physics - Susceptibility  
Magnetism

May 50

"Anisotropy of Magnetic Susceptibility of Silicon  
Iron Monocrystals in Weak Magnetic Fields," A. L.  
Gol'dman, V. V. Druzhinin, R. I. Yanus

"Zhur Tekh Fiz" Vol XX, No 5, pp 571-578.

Experimentally shows that, for weak fields, lowest  
magnetic susceptibility ( $\kappa$ ) in monocrystal  
disks of an alloy of iron with 3% silicon is ob-  
tained during magnetization along diagonal axis of  
cubic lattice, and highest is obtained along te-  
tragonal axis. Anisotropy of susceptibility  
164T53

USSR/Physics - Susceptibility  
(Contd)

May 50

corresponding to N. S. Akulov's well-known "law of  
anisotropy" exists only for magnetizations that ex-  
ceed considerably the region of maximum suscep-  
tibility. Submitted 25 Jun 49.

GOL'DMAN, A. L.

164T53



LEYBUSH, A.G. , kand.khim.nauk; GOL'DMAN, A.M., kand.khim.nauk

Removal of carbon dioxide and carbon disulfide from coke gas  
with the aid of monoethanolamine. Part 1. Trudy GIAP no.7:  
167-187 '52. (MIRA 12:9)  
(Coke-oven gas) (Gas purification) (Ethanol)

LEYBUSH, A.G., kand. khim. nauk; GOL'DMAN, A.M.; GRUZINTSEVA, A.N.

Side reactions during the removal of carbon dioxide and hydrogen  
sulfide from coke-oven gas by the use of monoethanolamine. Part 3.  
Trudy GIAP no.8:124-144 '57. (MIRA 12:9)  
(Coke-oven gas) (Gas purification) (Ethanol)

*Goldman, M. S.*

S/064/60/000/004 001/000  
R015/B060

AUTHORS: Goldman, M. S., Doctor of Chemical Sciences, Goldsman, A. M.  
Candidate of Chemical Sciences, Olovskiy, V. K.,  
Candidate of Technical Sciences, Rusinskiy, V. R.

TITLE: Catalytic Oxidation of Cyclohexane With Compressed Air  
by the Continuous Method

PERIODICAL: Khimicheskaya promyshlennost', 1960, No. 4, pp. 1-8

TEXT: I. M. Rozenfeld, A. A. Lavrichenko, I. L. Vaysman, N. K.  
Zhitnikova and the personnel of the pilot plant of the Gubakhtinskiy  
khimicheskii zavod (Gubakha Chemical Works) took part in the work  
described here. The said pilot plant was set up for the experiments  
under discussion, and is schematically reproduced in Fig. 1. The long-  
lasting continuous operation of this pilot plant for the oxidation of  
cyclohexane with atmospheric oxygen under pressure yielded the following  
results among others: At a pressure of 18-24 atm, a temperature of  
130-140°C, and with cobalt stearate serving as a catalyst in a

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Catalytic Oxidation of Cyclohexane With  
Compressed Air by the Continuous Method

S/604/00/000/001/001/006  
E01/1000

concentration of 4 g per 100 l of cyclohexane, the conversion of cyclohexane amounts to 10-12% in one passage, and the yield of aniline, anhydride, and adipic acid is 80-85% (of the reacted cyclohexane). Water and benzene reduce the oxidation rate. Slowing down the air supply improves the exploitation of oxygen. Apart from adipic acid, there develop succinic, glutaric, and oxalic acids, with the part by weight of low dicarboxylic acids amounting to about 20% of the total amount of organic acids. The process of dehydrogenation of cyclohexanone (which was obtained by oxidation of cyclohexanone) was studied on a continuously working pilot plant (Fig. 4) (with the assistance of V. M. Kozlov) and was compared with the results obtained from cyclohexanone produced from phenol (Table 1). On a pilot plant (Fig. 5) the authors worked out a scheme (Table 2) for separating the products obtained from the oxidation of cyclohexane. The products obtained corresponded, as to their quality to the analogous products obtained in the production of adipolactam from phenol. V. I. Chernozhukov, S. E. Kreyz, K. I. Ivanov, L. V. Borovik, Ye. E. Denilov, N. M. Eshenel, A. I. Finkel'shteyn, Candidate of Chemical Sciences, and L. M. Freylin are mentioned in the paper.

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Catalytic Oxidation of Cyclohexane With  
Compressed Air by the Continuous Method

S/064/60/000/004/001/006  
B019/B060

Mention is made, moreover, of experiments of noncatalytic oxidation of cyclohexane by means of air, carried out at the GIAP (State Scientific Research and Planning Institute of the Nitrogen Industry) in the years from 1948 to 1953. There are 2 figures, 4 tables, and 19 references, 14 Soviet, 3 US, 1 French, and 1 British.

✓

Card 3/3

FURMAN, M.S., doktor khim.nauk; GOL'DMAN, A.M., kand.nauk; OLEVSKIY,  
V.M., kand.tekhn.nauk; RUCHINSKIY, V.R.; Prinsipali uchastiye:  
ROZENFEL'D, I.M.; LAVRICHENKO, A.A.; VAYSMAN, I.L.;  
ZHITNIKOVA, N.K.

Catalytic oxidation of cyclohexane by air under pressure  
by the continuous method. Khim.prom. no.4:265-272  
Je '60. (MIRA 13:8)

(Cyclohexane) (Oxidation)



LEYBUSH, A.G.; LYUDKOVSKAYA, B.G.; GRUZINTSEVA, A.N.; LIXHACHEVA, A.S.;  
YANYKINA, Ye.V.; GOL'DMAN, A.M.

Effect of the thermal treatment of a nickel catalyst on the process  
of methane conversion. Khim. prom. no. 2:90-96 F '61. (MIRA 14:4)  
(Methane) (Catalysts)

S/064/62/000/004/001/002  
3101/3138

ATTN: Pol'shan, A. M., Candidate of Chemical Sciences,  
Preobrazhenskiy, V. A., Sedova, S. M., Trubnikova, V. I.,  
Purman, M. S., Doctor of Chemical Sciences

TITLE: Preparation of adipic acid by the nitric acid oxidation of  
the products of cyclohexane oxidation in air

PERIODICAL: Khimicheskaya promyshlennost', no. 4, 1962, 7-11

TEXT: To synthesize adipic acid, experiments were conducted at the GIAP, in the nitric acid oxidation of: rectified cyclohexanol (I), crude cyclohexanol (II) consisting of 75% cyclohexanol and 25% X-oil (distillation residue from oxidation of cyclohexane in air), a mixture of 50% cyclohexanol + 50% X-oil (III), and 70% cyclohexanol + 30% X-oil. Reaction was obtained by adding the starting substance dropwise to 57% HNO<sub>3</sub> at 70°C, ratio HNO<sub>3</sub> (100%) : starting substance = 4.5 : 1, pressure 1-7 atm, copper-vanadium catalyst. Of the nitrous gases forming, NO and NO<sub>2</sub> can be regenerated to HNO<sub>3</sub> in the GIAP apparatus at 3.5-7 atm. After adding all the organic starting substance and completing the first state the mixture

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Preparation of adipic acid ...

S/004/62/000/004/001/002  
B101/B126

was heated to 100°C and agitated for 30 mins. Then the product was drained from the vessel, and the adipic acid and lower dicarboxylic acids precipitated at room temperature were filtered off. The more readily soluble lower dicarboxylic acids were removed with distilled H<sub>2</sub>O at 40°C. The mother liquor was analyzed chromatographically for adipic, glutaric, succinic, propionic, and acetic acids. Results: (1) C<sub>6</sub>H<sub>11</sub>OH synthesized from C<sub>6</sub>H<sub>5</sub>CH and from C<sub>6</sub>H<sub>12</sub> yielded equal amounts of adipic acid: 1.29 g per g starting substance, but a larger quantity of other dicarboxylic acids was formed with C<sub>6</sub>H<sub>12</sub>. (2) At 3.5 atm (optimum) the adipic acid yield (g adipic acid per g starting substance) was ~1.12 with I, ~1.35 with II, ~1.15 with III. Nitric acid consumption was insignificant: (g HNO<sub>3</sub> per g adipic acid) 0.05 with I, ~0.87 with II, ~1.06 with III. (3) Saponification of the esters in the X-oil with 16% NaOH (250°C, 55 atm, 30 min) resulted in additional quantities of cyclohexanol and cyclohexanone, the oxidation of which increased the adipic acid total yield (by 0.149 g per g saponified X-oil (total adipic acid yield 0.71 g per g X-oil)). The resultant high consumption of HNO<sub>3</sub> is explained by incomplete separation of the hydrocarbon solution and the alkali. The adipic acid obtained from

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Preparation of adipic acid ...

S/064/02/000/001/002  
3101/3118

X-oil is yellowish to brownish, but can be purified by recrystallization or with activated carbon. (4) Adipic acid has been produced in an experimental plant by oxidation of II since March 1960, and the methods had been found technically satisfactory. There are 4 figures and 2 tables. The most important English-language references read as follows: Chem. Week, 79, 71 (1956); 1. Kamlet, US Patent 2844626, 1959.

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GOLDMAN, A.M., kand.khimicheskikh nauk; ZAYTSEV, A.I.; KOSTYLEV, G.I.;  
LAKHMANCHUK, L.S.; LUBYANITSKIY, I.Ya., kand.khimicheskikh nauk;  
PREOBRAZHENSKIY, V.A.; FURMAN, M.S., doktor khimicheskikh nauk;  
Prinimali uchastiyu: ZHADIN, B.V.; VESEL'CHAKOVA, T.L.; SEDOVA, S.M.;  
TRUBNIKOVA, V.I.; KUPIN, M.I.; ZHUKOVA, Ye.I.

Preparation of adipic acid in a continuous pilot unit.  
Khim.prom. no.5:323-327 My '62. (MIRA 15:7)  
(Adipic acid)

ACCESSION NR: AT403353i

S/0000/63/000/000/0017/0030

AUTHOR: Gol'dman, A. M. (Candidate of chemical sciences); Kostylov, G. I.;  
Lubyanskiy, I. Ya. (Candidate of chemical sciences); Minati, R. V.;  
Preobrazhenskiy, V. A.; Sedova, S. M.; Trubnikova, V. I.; Furman, M. S.  
(Doctor of chemical sciences)

TITLE: Derivation of adipic acid by nitric acid oxidation of the products of  
air oxidation of cyclohexane

SOURCE: Poluprodukty\* dlya sinteza poliamidov (Intermediates for polyamide  
synthesis). Moscow, Goskhimizdat, 1963, 17-50

TOPIC TAGS: adipic acid, cyclohexanol, cyclohexane, phenol, nitric acid, cy-  
clohexane air oxidation, cyclohexanol air oxidation, cyclohexanol nitric acid  
oxidation, adipic acid derivation, phenol hydrogen reduction, nitric acid  
oxidation catalyst, adipic acid plant, bulk reactor

ABSTRACT: This extensive report reviews existing literature on adipic acid  
and its derivation, considers in detail the theory and mechanism of cyclohexanol  
oxidation with nitric acid (chemical equations are included) and reports the  
effect of various catalysts on the efficiency of the process.

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ACCESSION NR: AT4033531

Experimental studies of the process (equipment illustrated) were carried out at 1, 3.5 and 7 atm, 1st stage temperature 70C, 2nd stage 100C, nitric acid concentration 57% by weight, weight ratio of (100%) nitric acid to organic raw material 4.5:1. Results are tabulated (see table 1 in the Enclosure). Special experiments concerned X-oil residue and its oxidation with nitric acid. Analysis of the derived adipic acid showed that double recrystallization (water) and activated carbon purification of the latter provides material satisfying all government specifications relating to production of the so-called "AG" salt (a polycondensate of adipic acid and hexamethylenediamine). Experimental continuous production equipment capable of producing 100 kg of adipic acid per day was assembled and used in a series of experiments to study design requirements and optimal process factors for industrial production. The experiments involved cyclohexanol derived from hydrogen reduction of phenol and atmospheric air oxidation of cyclohexane. First stage temperature was 55 to 70C (60 to 65C for phenol-derived material), second stage and blow-off column was at 100C, nitric acid concentration 57% by weight, weight ratio as above was 4 to 4.5:1. It is concluded that bulk type reactors are suitable for continuous nitric acid oxidation at atmospheric pressure. Maximal yield of adipic acid from phenol-derived cyclohexanol in the presence of a catalyst was 1.25 kg per 1 kg of raw material. "The method of dispersion chromatography on diatomaceous brick was

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ACCESSION NR: AT4033531

developed by G. T. Levchenko, I. G. Solov'yeva and I. G. Malkova of GIAP. V. R. Ruchinskiy of GIAP also took part in the work." Orig. art. has: 11 tables, 6 graphs, 7 illustrations and 14 chemical formulas.

ASSOCIATION: None

SUBMITTED: 12Oct63

DATE ACQ: 06Apr64

ENCL: 01

SUB CODE: OC

NO REF SOV: 019

OTHER: 012

3/4

Card



ACCESSION NR: AT4033531

ENCLOSURE: 01

Table 1

Oxidation of cyclohexanol at atmospheric pressure (catalyst in % of the weight of organic raw material 0.7 Cu, 0.2  $\text{NH}_4\text{VO}_3$ )

Organic raw material	Composition of reaction gases, vol. %					Yield of di-carboxylic acid, g/g of organic raw materials		Nitric acid consumption, g/g of adipic acid	
	$\text{NO}_2 + \text{N}_2\text{O}_4$	NO	$\text{N}_2\text{O}$	$\text{N}_2$	$\text{CO}_2$	adipic acid	glutaric acid	citric acid	succinic acid
Cyclohexanol									
from phenol	2.6	23.7	41.2	20.8	6.7	1.29	0.035	0.028	0.65
from cyclohexane	9.5	16.4	38.0	32.9	3.1	1.29	0.110	0.080	

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ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED  
DATE 07-10-2001 BY 60322 UCBAW

1. The following information was obtained from a review of  
the file of the subject, 17 Nov 73: 15-1-73

GOLDMAN, A. N.

"Treatment for Hypertonia by Paraffin Applications," Sov. med., No.2, 1949

Clinical Dept., Central Sci. Res. Inst. Physical Therapy im. Sechenov

SSV/120-5,4-47/50

AUTHORS: Goldobin, A. N., Lezheyko, L. V.

TITLE: A Device for Electrolytic Sharpening of Point Probes with Control of the Quality of the Point

PERIODICAL: Priory i tekhnika eksperimenta, 1959, Nr 4, pp 156-157 (USSR)

ABSTRACT: The authors describe a variant of the electrolytic method of sharpening point probes. A device is used which sharpens a probe by periodic immersion of the latter into an electrolyte and removal of the probe from the electrolyte at a controlled rate. This rate depends on the diameter of the original rod or wire and the rate of dissolution of the probe material by the electrolyte. The device makes it possible to produce rapidly point probes with the quality of the point controlled continuously by means of a binocular magnifier or a binocular microscope MBS. Alternatively, the point may be projected on a screen and its quality judged from its magnified image. The device is shown schematically in Fig 1, and its photograph is given in Fig 2 (numbering of details in both figures is the same). Five support rods are fixed to an ebonite base 1. Four of the support rods (2 and 3) are used to mount the main part of the device and one such rod 4 carries a small lamp 13. A d.c. motor 6 with

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NOV/120-59-4-47/50

A Device for Electrolytic Sharpening of Point Probes with Control of the Quality of the Point

a worm reducer 7 rotates a crankshaft mechanism 12 . The crankshaft and a small roller 11 convert the rotation of the motor shaft into a vertical up-and-down motion of a rod 9 which carries a clamp 13 to hold the probe. The electrolyte is placed in a beaker 22 on a moveable table 21 . The motor is supplied through a potentiometer (or a rheostat), which is used to alter the rate of rotation of the motor shaft and thus the rate of the up-and-down motion of the probe. D.c. current is supplied through terminals (15 in Fig 2) to the electrolyte and the probe; this current is also controlled by means of a potentiometer. A binocular magnifier 17 or a microscope has its own stand separate from the device itself. When wires of 0.5 mm diameter and thinner have to be sharpened into probes, the rate of up-and-down motion produced by the motor may be too small; for this purpose the device can be used without the reducer 7 and the motor 6 - the crankshaft is then rotated manually by means of a knob 20 . The following parameters can be varied in this device: (a) the electrolyte composition and density, (b) the current density through the electrolyte

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107/100-53-4-47/50

A Device for Electrolytic Sharpening of Point Probes with Control of the Quality of the Point

and the probe, (c) the rate of immersion of the probe into the electrolyte and the rate of its removal from the electrolyte. The rates of immersion and removal determine the duration of action of the electrolyte on various parts of the probe point. The device can be used to produce uniform symmetrical cone-shaped probes of any metal and to improve the quality of probes already sharpened or to reduce the probe dimensions. There are 2 figures and 3 references, 2 of which are English and 1 German.

ASSOCIATION: Institut poluprovodnikov AN SSSR (Institute for Semiconductors, Academy of Sciences, USSR)

SUBMITTED: July 14, 1958.

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GODIKHAN, A.M.; KOTKO, A.I.

Cardiac electrokymography in hypertension and its changes during health resort and climatic treatment. Vest. rent. i razv. AF no. 5:71-73. S-P 1975. (111A 18:10)

1. Terapevticheskaya klinika (zav. - prof. I.I. Tatarovskiy) i rentgen. uslovo otdeleniya (rav. - kandi. i. i. nauk I.I. Yakhovlev) Instituta meditsinskoy klimatologii i klimatoterapii imeni I.M. Sechenova, Yalta.

GOL'DMAN, B.M.

Role of bronchoscopy in determining indications for surgery in  
pulmonary tuberculosis. Vrach.delo no.7:743 J1'58 (MIRA 11:9)

1. Otdeleniye khirurgii legochnogo tuberkuleza Odesskoy oblastnoy  
klinicheskoy bol'nitsy.  
(BRONCHOSCOPY)  
(TUBERCULOSIS)



1ST AND 2ND ORDERS										3RD AND 4TH ORDERS									
PROCESSES AND PROPERTIES INDEX																			
<div style="position: relative;"> <div style="position: absolute; top: 10px; right: 10px; font-size: 2em;">11-I</div> <div style="position: absolute; top: 10px; left: 10px; transform: rotate(-90deg); font-size: 0.8em;">COMMON ELEMENTS</div> <div style="position: absolute; bottom: 10px; left: 10px; transform: rotate(-90deg); font-size: 0.8em;">MATERIALS INDEX</div> <div style="position: absolute; top: 50%; left: 50%; transform: translate(-50%, -50%); font-size: 1.2em;"> <p>           - Biochemistry of oögenesis. W. Niemierko and C. Goldman (Nencki Inst. Exptl. Biol. Lodz). <i>Acta Phys. Exptl.</i> (Warsaw) 14, 56-67 (1947). - During the growth of eggs of hens 3 periods can be distinguished. The 1st ends when the wt. of the egg cell exceeds 100 mg.; during the 2nd period the wt. increases to 1 g.; the 3rd period ends when the egg attains its final size. During the 1st period the proteins are the chief constituents of the egg cell (50-58% of the dry substances), there is a proportional increase in the proteins and fats, and the water content is the greatest (85-89%). The ratio of proteins to fats is 3:1, and the cholesterol content of fats is 8-14%. The transition of the oocytes from the first to the second period is accompanied by great changes in their chem. compn.; there is a large increase in the dry substances, and the ratio of fats to proteins shifts in favor of the fats. During the 3rd period the compn. of the cell remains essentially unchanged since all components increase in proportional amts. The fats are the principal constituents of the egg during the 3rd period (60% of the dry substances), the dry substances increase to 40-60% of the wt. of the egg. The ratio of fats to proteins is 2:1, and the cholesterol content of fats is 5%.         </p> <p style="text-align: right;">H. H. Semant</p> </div> </div>																			
<div style="display: flex; justify-content: space-between;"> <div> <p>ASB-15A METALLURGICAL LITERATURE CLASSIFICATION</p> <p>SECTION SYMBOLS</p> <p>SYMBOLS FOR 1ST ORDER</p> <p>SYMBOLS FOR 2ND ORDER</p> <p>SYMBOLS FOR 3RD ORDER</p> <p>SYMBOLS FOR 4TH ORDER</p> </div> <div> <p>SECTION SYMBOLS</p> <p>SYMBOLS FOR 1ST ORDER</p> <p>SYMBOLS FOR 2ND ORDER</p> <p>SYMBOLS FOR 3RD ORDER</p> <p>SYMBOLS FOR 4TH ORDER</p> </div> </div>																			

GOLDMAN, D.

Problem demanding quick solution. Iron.koob. no.8:21 Ag 52.  
(MLRA 10:5)

1. Starshiy bukhgalter erte i 1944 godu "Pobeda," Dnepropetrovsk.  
(Houline)

GOLDMAN-E.

Determination of the quality of blood supplied for drilling.  
E. Goldman (Meat Combine, Moscow). *Izvestiya Akad. Nauk S.S.S.R.* 27, No. 2, 14-15 (1960).—Sp. gravity, viscosity, and dry residue (I) were detd. to check the quality of the cattle blood used for the prepn. of serum albumin (II). The sp. gravity of the blood (1.042-1.050) is directly related to its I (15.24-20.83%). In a good quality blood the amt. of II should not be below 15%.

E. Wierzbicki

DOGADKIN, B.; PECHKOVSKAYA, E.; GOLDMAN, E.

Structure and properties of filled rubber mixtures. Part 16: Mixtures  
from butadiene-Na rubber with colloidal silica. Kauch. i rez. 16 no.8:  
1-4 fig 157. (MIRA 10:11)

1. Nauchno-issledovatel'skaya rabota po razrabotke i  
(Rubber, Synthetic) (MIRA 10:11)

GOL'DMAN, E. E.

YASHINSKAYA, A. I., kandidat tekhnicheskikh nauk; GOL'DMAN, E. E.

"White coat." Priroda 46 no. 6: 28-30 Jan 1957. (MIRA 10: 7)

L. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Moskva)  
(Silica)

COL'DMAN, E. E.

AUTHORS: Pashkovskaya, N. A., Gol'dman, E. I., Doroshin, B. A. 62128-3/8

TITLE: Structure and Properties of Rubber Mixtures Containing Fillers. (Struktura i svoystva napolnennykh rezinovykh smesey). Part 17. Properties of Colloidal Silicic Acid, Defining its Strengthening Effect. (Sobshcheniye XVII. Svoystva kolloidnoy kremnisloty, opredelyayushchiye ee usilivayushchiy effekt.)

PERIODICAL: Kauchuk i Rezina, 1958, No. 2, pp. 12 - 17. (USSR).

ABSTRACT: A detailed investigation of samples of colloidal silicic acid of varying activity was carried out. Electron-microscopic investigations were made to determine the degree of dispersion. Figs. 1 and 2 show micro-photographs of active (strengthening the rubber) and inactive (giving only a slight strengthening effect on the rubber) samples; the size of the particles was approximately 150 - 200 Å. The optical density of aqueous suspensions was determined, and it was found that the light absorption in suspensions containing active silicic acid, equal weight concentration, was twice as large as the light absorption in suspensions containing the inactive sample (Table 1). The dispersion of active and inactive modifications of colloidal silicic acid in isobutadiene rubber was evaluated by microscopic analysis.

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62B-2-3/8

Structure and Properties of Rubber Mixtures Containing Fillers. Part 17. Properties of Colloidal Silicic Acid, Defining its Strengthening Effect.

and by adding colouring agents. Figs. 3 and 4: micro-  
photographs of rubber mixtures containing inactive/  
active silicic acid. Surface properties of the filler  
are determined by the nature of the filler itself, and  
by the by-products adsorbed on the surface of the par-  
ticles. It was, therefore, necessary to determine to  
what degree the activity of the colloidal silicic acid  
and of the filler depends on the adsorbed substances.  
Such admixtures are electrolytes which were separated  
by high voltage dialysis. Results of this purification  
are given in Table 5; they show that the separation of  
adsorbed admixtures with active colloidal silicic acid  
do not lead to deactivation. The electrical properties  
of the samples of colloidal silicic acid, with a varying  
degree of activity, were determined by electrophoresis  
on an apparatus designed by G. Robinovitch and L. F.  
Hunt. The experiments were carried out on suspen-  
sions of silicic acid in aqueous solution of glycerine,  
the concentration = 2.4 g/l. Some admixtures can be  
separated at increased temperatures, e.g. the samples of  
active colloidal silicic acid were heated in auffle

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20-119-6-33/56

AUTHORS: Dogadkin, B., Pechkovskaya, K., Gol'dman, E.

TITLE: On the Structure and the Reinforcing Action of Colloidal Silicic Acid as Filler of Synthetic Rubber ( O strukture i usilivayushchem deystvii kolloidnoy kremneki-sloty kak napol-nitelya sinteticheskogo kauchuka)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol. 119, Nr 6, pp. 1170 - 1173 (USSR)

ABSTRACT: This work investigates the character of the distribution of the colloidal silicic acid as representative of a new glass of intensifiers in sodium-butadiene rubber. This test object also was chosen for the following reason: Of the same raw material and also by the same method, only varying of the conditions of the technological process, samples of colloidal silicic acid with essentially different reinforcing effect can be produced. From this the possibility of the comparison of active and inactive fillers results. For the performance of these experiments a series of samples of colloidal silicic acid with high, mean, and low

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On the Structure and the Reinforcing Action of  
Colloidal Silicic Acid as Filler of Synthetic Rubber

20-119-6-33/56

reinforcing action in rubber sorts of sodium-butadiene rubber was produced. The chemical composition of these samples practically was equal and they also differed only very little with regard to the specific surface, pH, and various adsorption characteristics. But the rubber mixtures produced on the base of sodium-butadiene rubber, which contain the samples mentioned have an essentially different structure of the mixture and also essentially different physical-mechanical properties of the vulcanisates. The degree of the structuring of the filler in the mixture is characterized by the lixivation coefficient which is determined by the share of the filler, which passes over into the basic solution, in its total content in the mixture. A diagram illustrates the dependence of the lixivation coefficient on the rate of filling for samples of colloidal silicic acid of the highest or lowest reinforcement coefficient resp. (active resp. inactive samples). The most active silicic acid is leached out much easier than the inactive one. The higher the lixivation coefficient is for a given system the stronger marked are also the strength properties of the vulcanisate.

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On the Structure and the Reinforcing Action of  
Colloidal Silicic Acid as Filler of Synthetic Rubber

20-119-6-33/56

The activity of the colloidal silicic acid can be decreased considerably by heating at 600°C. There are 4 figures, 3 tables, and 7 references, 3 of which are Soviet.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti  
(Scientific Research Institute of Tire Industry)

PRESENTED: December 25, 1957, by P. A. Rebinder, Member, Academy of  
Sciences, USSR

SUBMITTED: December 12, 1957

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3/13/41/000/004/005/006

A051/A129

AUTHORS: Pechkovskaya, K.A., Orlovskiy, P.N., Goldman, E.I.

TITLE: The classification of carbon blacks for the production of rubber

PERIODICAL: Kauchuk i rezina, no. 4, 1961, 47-48

TEXT: Prior to the Second World War two types of carbon black were manufactured in the Soviet Union: channel gaseous and lamp carbon black. By 1956 six different types were produced, viz. furnace, jet burner, thermal and anthracene carbon black. In connection with the forthcoming revision of the ГОСТ - GOST 7885-56, the introduction of a new, stricter classification of the carbon blacks is being considered. In the recommended classification the name of the carbon blacks takes into account the use of the raw material. A number is added to the letter designation if more than one type of carbon black is produced by one method from the same raw material. The first letter designates the method of the carbon black production K - (K), for channel, П (P) for furnace, and Т (T) for thermal. The second letter is associated with the type of the raw  
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8/11/71/001/005/006

005/01/05

The classification of

material used Г - (G) - for gasous М - (M) - for carbon blacks produced from liquid raw material, А - (A) - acetylene, М<sub>н</sub> - (Mn) - methane. If a mixed raw material is used, then the designation includes the letters ГМ - (GM) or МГ - (MG), depending which of the two is the most important raw material. The table shows all the types of carbon blacks manufactured in the USSR, as well as all the new types intended for future production. ГМ -70 (PM) (furnace carbon black made from liquid raw material, with a specific surface of 70 m<sup>2</sup>/g) is an example of a carbon black produced after 1956 and thus not included in the GOST 7885-56. There is 1 table.

ASSOCIATION: Nauchno-issledovatel'skiy institut shinnoy promyshlennosti (Scientific Research Institute of the Tire Industry).

Card 2/4

S/081/61/000/023/055/061  
B106/B101

AUTHORS: Pechkovskaya, K. A., Goldman, E. I., Sheld-Khazemi, N. A.,  
Orlovskiy, P. N., Kupriyanova, V. L., Simanovskaya, S. A.

TITLE: Methods for determining the specific surface area of semi-  
reinforcing and reinforcing blacks for the technical control  
of black production

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 23, 1961, 560, abstract  
23P248. (Tr. N.-i. in-ta shin. prom-sti, sb. 8, 1960, 81-94)

TEXT: A description is given of three methods for determining the  
specific surface area of semireinforcing and reinforcing blacks. The  
specific adsorption surface is obtained by the method of adsorption of  $I_2$ .  
the geometrical specific surface by the calorimetric method, and the  
method of Deryagin provides a specific surface close to the adsorption  
specific surface. All of the three methods furnish conditional values  
for the specific surface, are simple, and can be used for the first  
technical control of the dispersity of blacks in industrial laboratories.  
[Abstractor's note. Complete translation.]  
Encl 1/1

GOLDMAN, L. A. 1964

1961-1962 1500 copies printed.

S. A. Kuznetsov; Tech. Ed.: Yu. S. Bel'chikova.

Information on the toxic effects of name ...

[illegible]

Industrial dusts from the action of an organism of	
Industrial Dust of Russia containing Rare	269
and Other Metals and their Compounds.	
Industrial dust from ore concentrates. O. A.	269
Industrial dusts	
Industrial dusts at powder-metallurgy plants (hard	
alloys). M. S. Kaplun (Deceased) and N. V. Mezentsova	267
Dust of metallurgical (Bessemer) slags. I. V. Roshchin	268
Industrial dust from copper ores. Lin Tai-in	265
Industrial dust from luminophores. E. I. Gol'dman et al	249
Industrial dusts from various sources (Russia, Poland and	
U.S.S.R.)	
Industrial dusts from the action of tin. L. Liebnikova	176

GOL'DMAN, E.I., sanitarnyy vrach

Occupational hygiene in the fluorescent lamp industry. Gig. i san.  
21 no.6:33-40 Je '56. (MLRA 9:8)

1. Iz Sanitarno-epidemiologicheskoy stantsii Stalinskogo rayona  
Moskvy.

(INDUSTRIAL HYGIENE,  
in luminescent lamp prod. (Rus))

GOL'DMAN, E.I. (Moskva)

Effect of low concentrations of mercury vapor and measures for  
controlling them in the manufacture of fluorescent lamps. Gig.  
truda i prof.zab. 3 no.6:11-16 N-D '59. (MIRA 13:4)

1. Sanitarno-epidemiologicheskaya stantsiya Stalinskogo rayona.  
(MERCURY--PHYSIOLOGICAL EFFECT)



GOL'DMAN, E. I., Cand Med Sci -- (diss) <sup>GOLDMAN</sup> "Problems of industrial hygiene in  
the manufacture of luminophores and luminiscent lamps." Mos, 1958. 14 pp  
(1st Mos Order of Lenin Med Inst im I. M. Sechenov), 200 copies (KL, 18-58,  
102)

-104-

S/194/61/000/006/036/077  
D201/D302

AUTHOR: Goldman, E.I.  
TITLE: Problems of labor hygiene in the manufacture of  
semi-conductor devices  
PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika,  
no. 6, 1961, 3, abstract o D13 (gigiyena truda i  
prof. zabolevaniya, 1960, no. 10, 30-35 (English  
summary))

TEXT: The problems of labor hygiene were investigated in the  
manufacture of HF germanium and silicon diodes and triodes. It  
was established that in the section producing monocrystals of semi-  
conductor materials, the worker is subjected to high air tempera-  
ture (up to 45°C), to the air content of hydrogen compounds of mat-  
erials produced and to electromagnetic fields with the electric  
field intensities  $> 100$  V/m and magnetic field intensities  $> 25$   
A/m, due to the presence of non-screened induction coils and feed-  
✓

Card 1/3

Problems of labor hygiene...

S/194/01/000/0.0/030/077  
D201/0312

erc In the process of obtaining Ge and of alloyed As,  $AsH_3$  has been found in the region of zone refining in concentrations reaching 0.003 milligram per liter near the exhaust and 0.001 milligram per liter in the operator's stand. The content of  $SbH_3$  at the operator's stand near the growing oven of Sb-doped monocrystals was found to be  $0.00015 \pm 0.00045$  mg/l after opening the oven. During the cleaning of internal standing oven surfaces from Ge or Si deposits, which is carried out manually with emery paper, the concentration of dust in the working section varies between 15 and  $67.6 \text{ mg/m}^3$  with Ge content in air reaching  $7 \text{ mg/m}^3$ . During cleaning of steves, with Sb introduced into the alloy, its content in air reaches  $> 0.05 \text{ mg/m}^3$ . During dry cutting the bars obtained, the dust content reaches  $6 \text{ mg/m}^3$ . During the dissolution process of piccin in hot solvent, the contamination of air by vapors of trichloroethylene is  $> 0.06 \text{ mg/l}$  and by vapors of toluene  $> 0.055 \text{ mg/l}$ . In the section of crystal etching some contamination of air has been detected by  $HF$  and  $HNO_3$  vapors. In sections of diffusion

Card 2/3

Problems of labor hygiene...

S/194/61/000/000/036/077  
D201/D502

tempering the main harmful factor is the high air temperature (up to 40°C), together with possible formation of hydro-metal compounds. In the process of covering, transitions of compounds, the evaporation of solvents often takes place, simultaneously with that of the compound itself. There are many operations in the semiconductor device manufacture which require considerable eye-sight stressing. The illumination of operating stands was found to vary between 500 and 1000 lux, while according to standards it should have been 750-3000 lux. In the measurement sections using special installations, EMP fields may be formed owing to poor screening. In addition, the operators may be subjected to soft X-ray radiation. The evidence obtained is used to formulate requirements on sanitary and health protecting measures. [Abstractor's note: Complete translation]

Card 3/3

GOL'DMAN, E.I.

Hygienic evaluation of the production of celluloid products as  
a source of atmospheric contamination. Gig. i san. 25  
no. 6:97 Je '60. (MIRA 14:2)

1. Iz sanitarno-epidemiologicheskoy stantsii Stalinskogo  
rayona Moskvyy.  
(CELLULOID) (AIR--POLLUTION)

GOL'DMAN, E.I.

Evaluation of industrial injury ~~to~~ workers of the electron vacuum  
tube industry. Zdrav. Ros. Feder. 5 no.12:18-22 D '61.

(MIRA 15:1)

1. Iz sanitarno-epidemiologicheskoy stantsii Pervomayskogo rayona  
Moskvy (glavnyy vrach B.M.Oslon).

(ELECTRON TUBES) (INDUSTRIAL ACCIDENTS)

PECHKOVSKAYA, K.A.; ORLOVSKIY, P.N.; GOL'DMAN, E.I.

Classification of carbon blacks for rubber manufacture. Kauch.  
i rez. 20 no. 4:47-48 Ap '61. (MIRA 14:5)

1. Nauchno-issledovatel'skiy institut shinnoy promyshlennosti.  
(Carbon black) (Rubber)

GOL'DMAN, E.I., kand.med.nauk

Methods for determining nitrogen oxides in the air. Sig. i ser.  
26 no.2:53-54 P '61. (MIRA 14:10)

1. Iz sanitarno-epidemiologicheskoy stantsii Stalinskogo rayona  
Moskvy.  
(NITROGEN OXIDE) (AIR-POLLUTION)



GOL'DMAN, E.I., kand.med.nauk

Noise characteristics of some machines in the lumbering industry  
and their hygienic evaluation. Trudy TSNIIME no.32:47-74 '62.  
(MIRA 15:5)  
(Lumbering--Machinery) (Noise)

COLLIER, HENRY, 1880-1950; BIRTH, 1. 1, 1880.

[Work appears in the electronic version of the library  
Glyfena traza y elektronski dani prap. konosti.  
Leningrad, Izdatel'stvo, 1961. 200 p. (1961)]

MAYOROV, Ya., General-major; VAZHENISIV, I., polkovnik; GATILENKO, I.,  
polkovnik; GOL'DMAN, G., polkovnik; MEL'NIKOV, A., polkovnik

Creatively study scientific communism. Kenn. Vooruah. S11  
46 no.19:58-61 O '65. (MIRA 18:12)

KOVAL'CHUK, L.M., inzh., GOL'DMAN, I.A., inzh.

Using induction heating for gluing tenon joints of windows.  
Der.prom. 9 no.6:13-15 Je '60. (MIRA 13:8)  
(Windows) (Gluing)

GOL'DMAN, I. I.

GOL'DMAN, I. I.

Lymphangioma of the nasal cavity. Vest.oto-rin. 19 no.4:94 J1-Ag '57.

(MIRA 10:11)

1. Iz Luninetskoy zheleznodorozhnoy bol'nitsy, Belorusskoy zheleznoy dorogi.

(NOSE--TUMORS)

GOL'DMAN, I.I.

Some features of the status of the ear, nose and throat in influenza.  
Vop.otorin. 21 no.6:83-85 N-D '59. (MIRA 13:4)

1. Iz kafedry bolezney ukha, gorla i nosa (zaveduyushchiy - prof.  
A.G. Likhachev) i Moskovskogo ordena Lenina meditsinskogo instituta  
imeni I.M. Sechenova.

(INFLUENZA, pathology)

(EAR, pathology)

(NOSE, pathology)

(THROAT, pathology)

USSR/Petroleum - Well Drilling  
Drilling Machinery

Jun. 1946

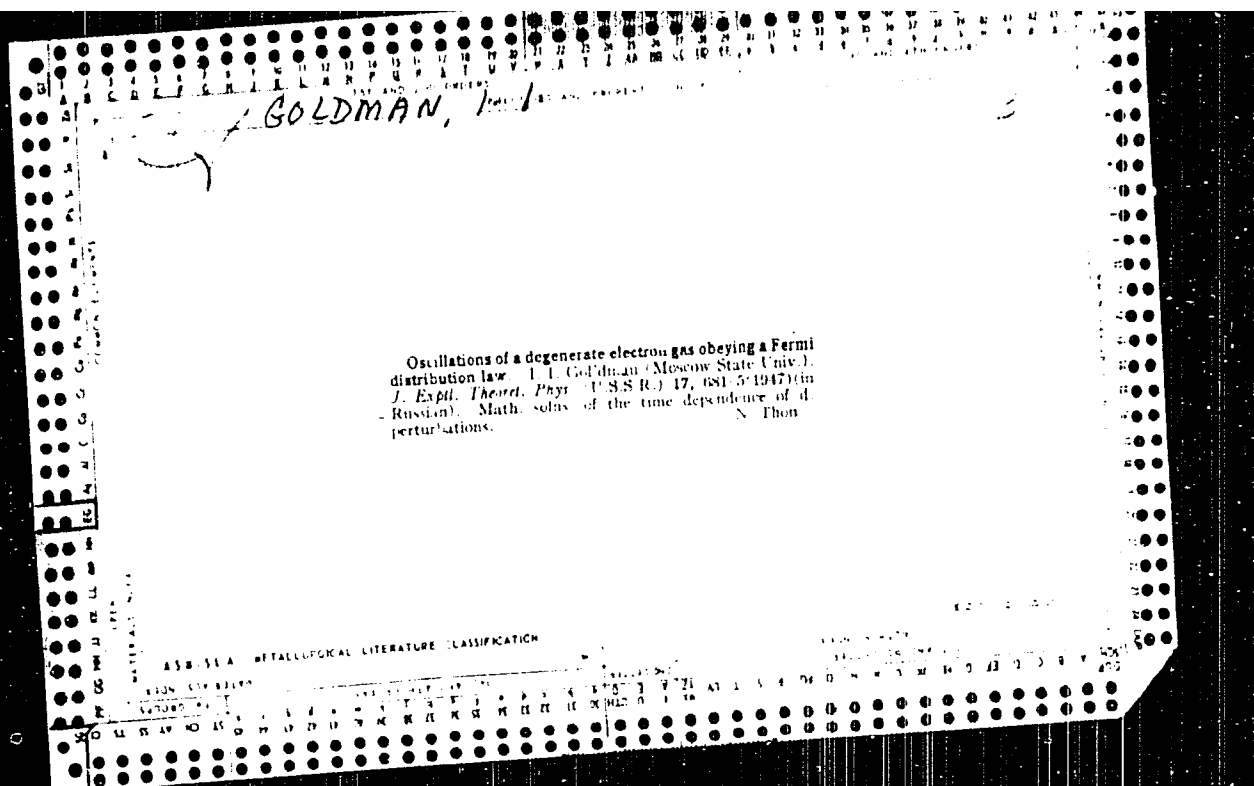
"The Production of Drilling Equipment in the Plant  
imeni Vorovskiy," I. I. Gol'dman, 2 $\frac{1}{2}$  pp

"Razvedka Nedr" No 3

Description of various machines for drilling wells  
produced by the Vorovskiy plant. Description very  
general, giving main characteristics of the machin-  
ery and the purposes for which it is to be used.

27T86

ID





SOB DMAN, I. I. Cand. Chem. Sci.

Dissertation: "On the Kinetics of the Reactions which occur during the Hydrolysis or Alcomolysis of Solutions of Acetic Anhydride." Moscow Order of Lenin State U Imeni M. V. Lomonosov, 26 Feb 47.

SO: Vechernyaya Moskva, Feb, 1947 (Project #17836)

Goldman, I. I.  
USSR/Nuclear Physics - Atomic spectra  
Card 1/1 : Pub. 146-5/18 FD-486  
Author : Goldman, I. I.  
Title : Theory of isotopic shift of spectral lines  
Periodical : Zhur. eksp. i teor. fiz., 24, 177-189. Feb 1953  
Abstract : Discusses isotopic shift in atomic spectra due to difference in masses and dimensions of nuclei of isotopes. Shows that the consideration of interaction of the optical electron and the deep electrons of the atoms eliminates the discrepancy between theory and experiments, particularly evident in the middle elements of the periodic table. Experimental data obtained on Cu, Zn, Rb, Ag and Ba facilitated analysis of behavior of changes of nuclear radii of isotopes of these elements and the evaluation of interaction of electron and nucleon. Indebted to Prof. A. B. Migdal.  
Institution : Physics Institute, Acad Sci Armenian SSR  
Submitted : September 14, 1952

GOL'DMAN, I. I.

PA 249T19

USSR/Nuclear Physics - Quadrupole Moments 11 Jan 53

"Spectroscopic Determination of Quadrupole Moments of Nuclei," I. I. Gol'dman, Phys Inst, Acad Sci, Armenian SSR

DAN SSSR, Vol 33, No 2, pp 241-244

Calculates the effect of screening (that is, deformation of the electrons belonging to the internal shells by the optical electrons) by finding the potential  $V$  of an inhomogeneous field created by an optical electron in the region of the nucleus, taking into account the deformation of the internal

249T19

shells by this electron. Acknowledges guidance of Prof A. B. Migdal and advice of Acad L. D. Landau. Presented by Acad A. I. Alikhanov 18 Nov 52.

249T19

GOLOMAN, I. I. AND KRIBYAN, V. A.

Polarization of Radiation and Relativistic Electron in Motion in Magnetic Fields of  
Nebulae and Stars

Izv. AN ArmSSR, ser. fiz.-mat. yestestv. i tekhn. n., 7, No 2, 1954, pp 31-42

The polarization of light of stars and nebulae is tentatively explained on basis of analysis of radiation emitted by relativistic electrons on circular orbits in magnetic fields. Formulas expressing polarization of electron radiation and the degree of polarization are found. Numerical examples for particular cases are given. The polarization degree shows a maximum at a  $90^\circ$  inclination of the magnetic moment of the star to the line of sight and vanishes at  $0^\circ$ . (RZhAstr, No 5, 1955)

SO: Sum. No. 639, 2 Sep 55

USSR/Physics - Cosmic rays, mesons

FD-1356

Card 1 of 1      Pub. No. 1, 1.

Author      Garibyan, G. M., and Mel'dman, I. I.

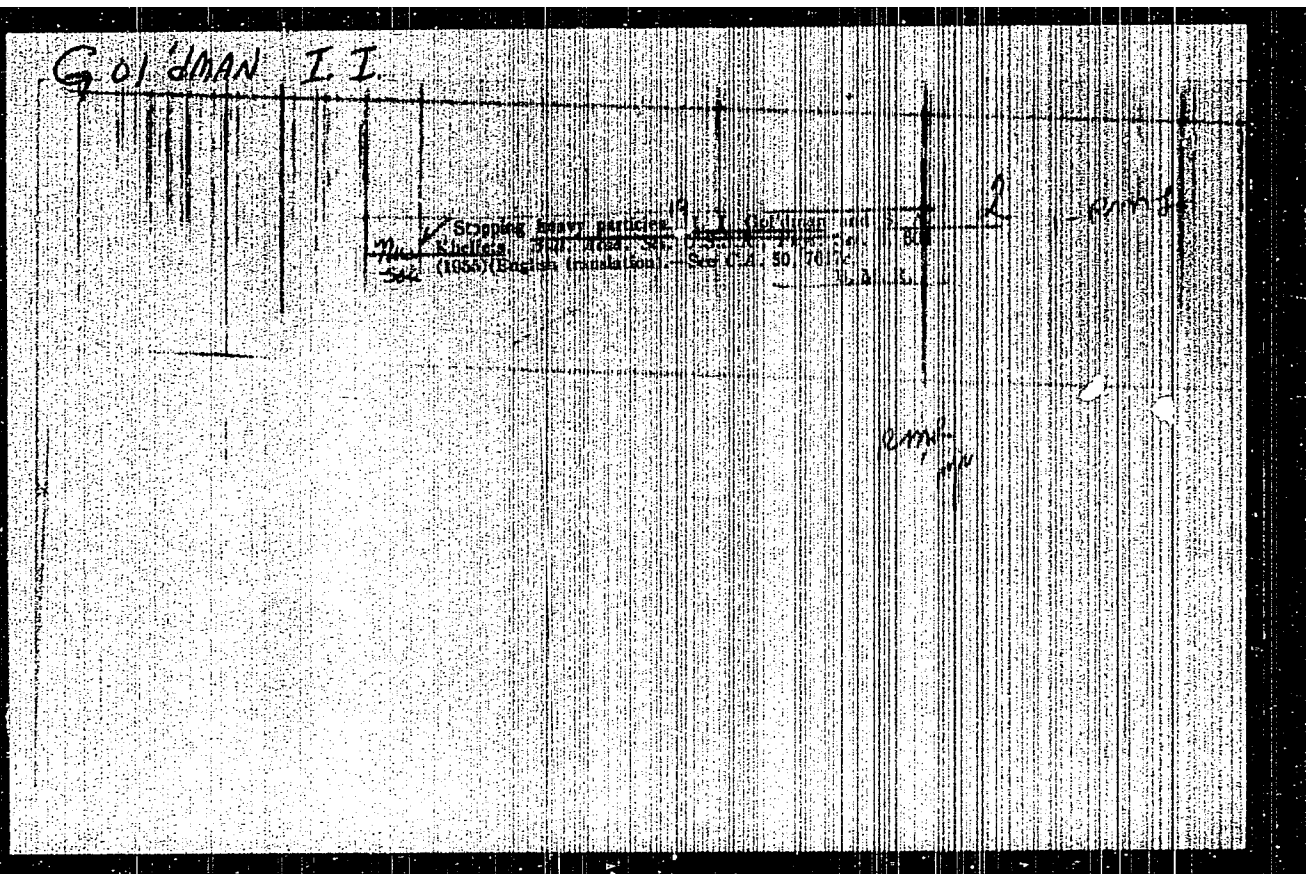
Title      Spectra of pi and mu mesons in cosmic rays

Periodical      Zhurn. eksp. i teor. fiz., 26, pp 257-262, Mar 1964

Abstract      The authors analyze the spectra of mu-mesons, on the basis of which they consider the spectra of generation and the atmospheric spectra of pi-mesons; i.e., they treat the problem of the connection between pi and mu mesons. The intensity and energy spectra of pi-mesons are obtained. The authors thank Prof. A. I. Alkhanyan, who posed the problem, and Academicians A. E. Alimhanov and L. D. Landau and Prof. M. B. Migdal, I. Ya. Pomeranchuk and Ye. L. Feynberg, who clarified some difficult points.

Institution      Physics Institute, Acad. Sci. Armenian SSR

Submitted      August 24, 1963



GOL'DMAN, I.I.; KHEMFETS, S.A.

On the stopping of heavy particles. Izv.AN SSSR Ser.fiz.19 no.6:  
665 N-D '55. (MLRA 9:4)

1.Fizicheskiy institut Akademii nauk Arm.SSR.  
(Cosmic rays) (Nuclear physics)

GOLDMAN, I.

USSR

6757. Theory of scattering in a quasi-classical approximation. I. I. GOLDMAN AND A. B. MIGDAL. Zh. eksper. teor. fiz. 28, No. 4, 594-600 (1955) in Russian.

The wave-function is represented as  $\psi = \phi_0 + \phi_1$  where  $\phi_0$  is the semi-classical (W.K.B.-like) function  $\sum A_n e^{iS_n}$ . The equation on  $\phi_1$  is then  $\Delta \phi_1 + k^2(x) \phi_1 = -\sum A_n \Delta e^{iS_n}$ . Approximate solutions are found for using a semi-classical Green function. G. L. BROWN



~~GOLDMAN, Joseph Abraham~~; KRIVCHENKOV, Vladimir Dmitriyevich; GETLIKHAN, B.T.,  
professor, redaktor; ZHAROTINSKIY, Ye.Ye., redaktor; GAVRILOV, S.S.,  
tekhnicheskii redaktor

[Collection of problems in quantum mechanics] Sbornik zadach po  
kvantovoi mekhanike. Pod red. B.T. Getlikhmana. Moskva, Gos.izd-vo  
tekhniko-teoret. lit-ry, 1957. 275 p. (MIRA 10:12)  
(Quantum theory--Problems, exercises, etc.)

AUTHOR: Gol'dman, I. I.

11/30/44/6

TITLE: The Polarization of Myons in Cosmic Rays (Polarizatsiya mionov v kosmicheskikh luchakh)

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1958  
Vol. 31, No. 4, pp. 1172-1179 (USSR)

ABSTRACT: The recently discovered non-conservation of parity in weak interactions leads above all to the asymmetry of the decay of polarized myons. The amount of asymmetry is, in this case, directly proportional to the degree of polarization. According to Lederman et al. (Ref. 1) the myons formed after the slowing down of the pions are probably polarized almost or completely in the direction of their motion. In the following calculations it is assumed that polarization in a single decay is complete. From this, of course, it does not follow at all that the myons in the cosmic rays are completely polarized. For the purpose of calculating the degree of polarization the author investigates a myon with the momentum  $p$  and the energy  $E$  which has formed by one de-

См. 1/5

The Polarization of Myons in Cosmic Rays

56-31-1-11-16

way of a pion ( $\pi^+$  or  $\pi^-$ ). The polarization of the myon amounts to a certain angle  $\alpha$  with the momentum. An expression for the mean value of the polarization is derived and written down. The polarization of the myons formed in the decay  $K^0 \rightarrow \pi^+ \pi^-$  is almost complete, while for the products of the decay  $K^0 \rightarrow \pi^+ \pi^-$  it amounts to about 0.3. By measuring the polarization of the cosmic myons in this way the ratio between the number of K mesons and the pions forming in the upper layers of the atmosphere could be found. Besides, the positive myons probably have a higher degree of polarization than the negative myons. Finally, the author makes some remarks on the depolarization of the myons; it is strongest after the slowing down of the particles and depends on the chemical properties of the material. This part of the depolarization can be best taken into account on the basis of the existing experimental data by using the symmetry of the decay  $K^0 \rightarrow \pi^+ \pi^-$ . Finally, the author thanks Professor A. I. Arkhan'yan for his interesting discussions. There are 3 references and 1 of which are Soviet.

Card 2/3



20723

S/022/60/013/006/004/005

C 111/ C 333

26.2357

AUTHOR: Gol'dman, I. I.

TITLE: On the theory of the deceleration radiation under consideration of multiple dispersion and evaluation of the accuracy of the method of Focker-Planck

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v.13, no.6, 1960, 55-61

TEXT: The author uses the notations from his paper (Ref.4: Tormoznoye izlucheniya pri vkhode v sredu s uchetom mnogokratnogo rasseyaniya [Deceleration radiation under penetration into the medium under consideration of multiple dispersion] "Zh ETF", 39, 203, 1960).

He considers the integral equation

$$\frac{\partial w}{\partial t} + \vec{v} \frac{\partial w}{\partial \vec{r}} = n \int \sigma(\vec{r} - \vec{r}') [w(t, \vec{r}, \vec{v}') - w(t, \vec{r}, \vec{v})] d\vec{v}' \quad (1)$$

for the distribution of the electrons without passing to the Focker-Planck approximation.

After longer transformations the author shows that the calculation of the deceleration radiation in a medium with

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20723

S/022/60/013/006/004/005

On the theory of the deceleration . . . C 111/ C 333

$$\dot{E}_\omega = \frac{4e^2 \omega \lambda^2}{\pi c} \operatorname{Re} \int_0^\infty \chi_1(x) g(x) dx \quad (38)$$

leads to the solution of the equation

$$\chi'' - \frac{1}{4x} \left[ 1 - \frac{1}{8s^2} v \right] \chi = 0 \quad (39)$$

with subsequent quadrature. Here it holds

$$g(x) = \frac{1}{32s^2} \frac{v}{\sqrt{x}} K_1(\sqrt{x}) \quad (40)$$

and the function  $v$  has the behavior:

$$\frac{v}{x} = 1 \text{ for } x \ll \left( \frac{\lambda}{b} \right)^2$$

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20723

On the theory of the deceleration . . . S/022/60/013/006/004/005  
C 111/ C 333

$$\frac{v}{x} = \frac{\ln 1.85 \lambda / \sqrt{x} a}{\ln b/a} \quad \text{for } \left(\frac{\lambda}{b}\right)^2 \ll x \ll \left(\frac{\lambda}{a}\right)^2.$$

The author considers limit cases. If the parameter  $s$  is large, then

$$\chi_1 = \sqrt{x} K_1(\sqrt{x}) \quad (42)$$

$$\dot{E}_\omega = \frac{4e^2 n v}{3\lambda^2 c} \ln \lambda/a \quad (45)$$

is obtained which coincides with the formula of Bethe.

Let now be  $s \ll 1$ . If even  $s \ll \left(\frac{\lambda}{b}\right)^2$ , then it becomes  $v/x = 1$  and

$$\chi_1 = \exp \left( - \frac{1-i}{8s} x \right) \quad (47)$$

$$\dot{E}_\omega = \frac{4e^2 \omega \lambda^2}{\pi c \cdot 8s} = \frac{2e^2 \sqrt{\omega} q}{\pi c}, \quad (s = \frac{\lambda^2}{4} \sqrt{\frac{\omega}{q}}) \quad (48)$$

Card 3/4

On the theory of the deceleration . . . S/022/60/013/006/004/005  
C 111/ C 333

If  $(\lambda/b)^2 \lesssim s \ll 1$ , then

$$\chi'' + \frac{1}{52s^2} \frac{V}{x} \chi = 0 \quad (46)$$

must be considered. If one restricts oneself to logarithmic exactness, then the value of  $V/x$  must be taken for  $x \sim 8s$ . Here (48) is maintained, where in  $q$  it must be put  $\ln \lambda/\sqrt{s}$  instead of  $\ln b/a$  which confirms the correctness of the interpolation according to Migdal (Ref. 3: Tormoznoye izlucheniye i obrazovaniye par pri blonshikh energiyakh [Deceleration radiation and formation of pairs under high energies] "ZhETF", 32, 633, 1957).

There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc. The reference to English-language publication reads as follows: A.B. Migdal. Bremsstrahlung and pair production in condensed media at high energies. "Phys.Rev." 103, 1811, 1956.

ASSOCIATION: Fizicheskiy institut AN Armysanskoy SSR (Physics Institute of the Academy of Sciences Armysanskaya SSR)

SUBMITTED: July 11, 1960

Card 4/4



GARIB'YAN, G.M.; GOL'DMAN, I.I.

Particle emission in a laminar medium. Dokl. AN Arm. SSR  
31 no. 4:219-225 '60. (MIRA 13:12)

1. Fizicheskiy institut Akademii nauk Armyanskoy SSR.  
Predstavleno akademikom AN Armyanskoy SSR A.I. Mikhanyanov.  
(Radiation) (Particles (Nuclear physics))

81674

S/056/60/038/06/10/012

BOC6/BO56

24,4500

AUTHOR: Gol'dman, I. I.

TITLE: Bremsstrahlung<sup>19</sup> at the Boundary of a Medium in Consideration of Multiple Scattering

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960, Vol. 38, No. 6, pp. 1866 - 1869

TEXT: Multiple scattering in a dense medium leads, as is known, to the occurrence of a bremsstrahlung of extremely relativistic electrons. For an unbounded medium, this effect has already been quantitatively calculated by A. B. Migdal. It was the aim of the present paper to investigate the influence exerted by the boundaries upon this effect, for which purpose the method used by Migdal is employed, and the so-called Landau-Pomeranchuk-Migdal effect is taken into account. It is assumed that the distribution function  $w(t, \vec{r}, \vec{v}; \vec{v}_0)$  obeys the equation of motion (5), in which in the following one goes over to the small-angle approximation ( $\theta = 0$ ).  $\vec{v}_0$  is the velocity with which the relativistic

Card 1/2

81674

Bremsstrahlung at the Boundary of a Medium  
in Consideration of Multiple Scattering

B/056/60/038/06/10/012  
B006/B056

electron (at  $t = 0$ ) investigated incides perpendicularly upon the surface of the semi-infinite medium. In Fokker-Planck approximation one obtains the solution (15) and with the introduction of  $\alpha$ ,  $\beta$ , and  $\xi$  one finally obtains (17) as a solution of the equation of motion. After substitution of the latter into equations (7) and (8) and after it has been integrated over  $n$ , it again gives the result obtained by Migdal. It is finally shown that, if the energy of the electron  $E > E_0$  (for lead  $E_0 \sim 3 \cdot 10^{12}$  ev),  $s > 1$  holds in the entire frequency range and, thus, the approximation method  $E = \frac{e^2}{\pi c} \ln \frac{1}{s}$  holds. The total energy loss on the boundary grows linearly with energy and exceeds the so-called transition radiation by six orders of magnitude. With  $E < E_0$  the approximate formula for  $E$  holds if  $\hbar\omega < E^2/E_0$ . The author finally thanks A. B. Migdal and G. M. Garibyan for discussions. There are 7 Soviet references.

ASSOCIATION: Fizicheskii institut Akademii nauk Armyanskoy SSR (Physics  
Institute of the Academy of Sciences of the Armyanskaya SSR)

SUBMITTED: January 16, 1960

Card 2/2

89487

S/022/61/014/001/007/010  
B112/B202

26.2312

AUTHOR: Gol'dman, I. I.

TITLE: Ionization losses and capture of slow, heavy, negative particles

PERIODICAL: Izvestiya Akademii nauk Armyanskoy SSR. Seriya fiziko-matematicheskikh nauk, v. 14, no. 1, 1961, 79-86

TEXT: The author studies the ionization and excitation of atoms by slow, negatively charged, heavy particles. While, in general, the behavior of the atom toward slow particles is adiabatic, an additional mechanism occurs when negatively charged, heavy particles are captured. This mechanism is due to the penetration of such particles into the atom. If the particle is heavy compared with the electrons, its motion follows the laws of classical mechanics:

$$\varphi = \int_{R_0}^R \frac{M \frac{dR}{dt}}{R^2 \sqrt{2\mu(E+\phi) - \frac{M^2}{R^2}}}$$

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89487

Ionization losses and capture...

S/022/61/014/001/007/010  
B112/3202

is the equation of the trajectory of a particle in the atomic field, where  $R$  and  $\varphi$  are the polar coordinates of the particle in the trajectory plane with the nucleus as origin,  $\mu$  - mass,  $E$  - energy,  $M$  - angular momentum of the particle,  $\phi$  - the potential of the atom, and  $k_0$  the shortest distance from the nucleus. The vanishing of the denominator in the trajectory equation signifies that the particle is very close to the nucleus. The author studies the slowing down of particles in gases. He distinguishes gases whose atoms are stable toward all particle layers and gases whose atoms are unstable toward their outer electrons when a particle comes too close. The Schrödinger equation for the electrons of the atom reads as follows:

$$i\hbar \frac{\partial \psi}{\partial t} = \left\{ H + V[\vec{R}(t)] \right\} \psi,$$

where  $V$  is the energy of the interaction between electrons and heavy particles; the following relation is obtained for the excitation

probability:  $w_{n'n} = \frac{m^2 c^3}{4Z^2 e^2 \hbar \omega_{n'n}} A_{n'n} \left| \vec{R}(\omega_{n'n}) \right|^2,$

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Ionization losses and capture...

S/022/61/014/001/007/010  
B112/3202

where  $A_{n'n}$  is the probability of an optical transition,  $\vec{v}(\omega)$  is the Fourier component of the velocity of the ionizing particle. To determine the excitation cross section

$$\sigma_{n'n} = 2\pi \int_0^{\infty} w'_{n'n} q dq$$

with the collision parameter  $q = M/\sqrt{2\mu E}$ , the author approximates the Fourier components of the coordinates of the particle in the Coulomb field by modified Hankel functions and obtains:

$$\sigma_{n'n} = \frac{e^2 m^2 c^3}{2\sqrt{5} \hbar \omega^3 \mu^2 v^2} A_{n'n}$$

Finally, he draws the energy balance of the ionization process assuming that  $E \ll (\mu Z^2 \omega^2)^{1/3}$

and  $\frac{Z^2}{\omega \mu} \ll 1$  in the Thomas-Fermi approximation. There are 1 table and Card 3/4

Ionization losses and capture...

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S/022/61/C14/001/007/010  
B112, B202

2 Soviet-bloc references.

ASSOCIATION: Fizicheskiy institut AN Armyanskoy SSR  
(Physics Institute AS Armyanskaya SSR)

SUBMITTED: July 11, 1960

Card 4/4

S/051/63/014/004/020/026  
E039/E420

AUTHORS: Gol'dman, I.I., Tarkhanyan, R.G.

TITLE: The change of potential in the atom influenced by the optical transition

PERIODICAL: Optika i spektroskopiya, v.14, no.4, 1963, 571-573

TEXT: In some quantum-mechanical problems the deformation of atoms due to optical transitions of the valency electrons must be taken into account. In this paper the spherically-symmetrical part of this change in potential is examined. For atoms with a not too small  $Z$  an approximate calculation can be carried out using quasi-classical motion of the majority of electrons in the atom. Starting from Poisson's equation the following expressions are derived for the change in potential in atoms due to removal of valency electrons

$$\Delta V = \frac{4\sqrt{2}\Phi}{51} V + \frac{2}{\pi r^2} \int \frac{(2l+1)5E_c}{P_c} dl - 4\pi |\psi_{val}(r)|^2 \quad (6)$$

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$$\int \frac{5E_c + V}{P_c} dl = 0 \quad (8)$$



The change of potential ...

S/051/63/014/004/020/026  
E039/E420

where  $\Phi$  is the unexcited potential and  $V \ll \Phi$ . [Abstracter's note: Other units not defined but self-evident.] Analysis of these equations shows that the contribution to the change in potential both by deep and weakly coupled electrons is not large; this justifies the use of quasi-classical wave functions in the calculations. The accuracy of Eq.(6) and (8), as in the case of Thomas and Fermi's equation, is determined by the smallness of the parameter  $Z^{-1/3}$ . The equations are also expressed in terms of the dimensionless Thomas-Fermi units.

SUBMITTED: September 21, 1962

Card 2/2

L 16880-63 EWT(1)/FCC(w)/BDS AFFTC/ASD/IJP(G)

ACCESSION NR: AP3005275

S/0056/63/045/002/0246/0250

AUTHOR: Arutyunyan, V. M.; Gol'dman, I. I.; Nagorskiy, G. A. 56 55

TITLE: Regge poles for scattering on a Delta potential.

SOURCE: Zhur. eksper. i teoret. fiz., v. 45, no. 2, 1963, 246-250

TOPIC TAGS: Regge pole, Delta-function potential, coincidence regression, pole motion

ABSTRACT: The Regge trajectories are investigated for scattering from a delta-function potential, the simplicity of which makes possible a study of details of pole motion such as coincidence recession into the complex plane. Asymptotic pole equations are obtained and the pole motion traced for small and medium positive or negative energies. The point of recession of the poles into the complex plane is established and the direction of their motion away from this point studied. It is concluded that many of the results are valid

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L 16880-63

ACCESSION NR: AP3005275

for an arbitrary potential without singularities at the origin.  
Orig. art. has 2 figures and 17 formulas.

ASSOCIATION: Fizicheskiy institut GKAE, Yerevan (Physics Inst.  
State Atomic Energy Commission)

SUBMITTED: 24Jan63

DATE ACQ: 06Sep63

ENCL: 00

SUB CODE: PH

NO REF SOV: 004

OTHER: 002

Card 2/2

L 16910-63

EWI(m)/BDS AFFTC/ASD AR

ACCESSION NR: AP3005285

S/0056/63/045/002/0312/0315

AUTHOR: Arutyunyan, F. R.; Gol'dman, I. I.; Tumanyan, V. A.

TITLE: Polarization phenomena in Compton effect on a moving electron and possibility of obtaining beams of polarized gamma quanta

SOURCE: Zhur. eksper. i teoret. fiz. , v. 45, no. 2, 1963, 312-315

TOPIC TAGS: gamma quantum polarization, Compton effect, relativistic electron, laser, polarized photon beam

ABSTRACT: The polarization of gamma<sup>19</sup> quanta resulting from Compton scattering<sup>19</sup> of soft photons by relativistic electrons is analyzed. This problem is of interest because the polarization of the primary photons can be chosen in arbitrary manner, for example primaries from lasers. It is shown that the degree of polarization of such photons can approach 100% both in the case of photons scattered at a given azimuth angle and in the case when the polarization state is averaged over this angle. This shows Compton scattering on relativistic electrons to be an efficient means of obtaining polarized gamma quanta, which can help in the solution of many problems such as photoproduction processes, and nuclear photodisintegration.

Orig. art. has 14 formulas.

ASSOCIATION: Physics Inst. Main Atomic Energy Comm.

Card 1/2

L 16345-65 EWT(1)/T IJF(c)/ESD(t)/ESD(es)/SSD/AFWL/ASD(n)-5/AFETR/  
RAEM(a)

ACCESSION NR: AP4049203

S/0022/64/017/005/0093/0097

AUTHOR: Gol'dman, I. I.

TITLE: Production of electron positron pairs by a photon in an  
intense electromagnetic field

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk,  
v. 17, no. 5, 1964, 93-97

TOPIC TAGS: photon, pair production, Dirac equation, polarization,  
ruby laser

ABSTRACT: Inasmuch as perturbation theory is not applicable to pair  
production at high proton intensity, the exact solution of the  
Dirac equation in the field of a plane wave is used. The pair pro-  
duction probability is first calculated in general form, after which  
it is assumed that the wave is monochromatic and the polarization is  
elliptic. For a plane polarized wave the result agrees with that of

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ACCESSION NR: AP4049203

H. R. Reiss (Journ. Math. Phys. v. 3, 59, 1962). For very low photon density in the beam the result goes over into the formula of Breit and Wheeler for pair production in a collision between two photons. By way of an example, it is calculated that in the case of collision of 10-BeV gamma quanta with the beam in a ruby laser the pair production cross section reaches  $10^{-32}$  cm<sup>2</sup>. Orig. art. has: 21 formulas.

ASSOCIATION: Fizicheskiy institut GKAE, Yerevan (Physics Institute GKAE)

SUBMITTED: 25Mar64

ENCL: 00

SUB CODE: NP

NR REF SOV: 002

OTHER: 004

Card 2/2

ACCESSION NR: AP4031165

S/0056/64/046/004/1412/1417

AUTHOR: Gol'dman, I. I.

TITLE: Intensity effects in Compton scattering

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1412-1417 |

TOPIC TAGS: Compton scattering, Klein-Nishina formula, laser emission, hard gamma ray absorption, hard gamma ray emission

ABSTRACT: In order to ascertain whether the Compton effect is correctly described by the Klein-Nishina formula at extremely large photon densities, such as can be produced by lasers, and whether processes in which several photons are absorbed in a single act with subsequent emission of a harder photon are probable under such conditions, a calculation valid at arbitrary photon densities is presented for these processes. The method consists of calculating the emission of a photon by an electron moving in the field of plane electromagnetic wave. The interaction of the incident photons with electron is described by using Volkov's exact solution (Z. Physik v. 94, 250, 1935), and the emission of the photon is treated in first-order perturbation theory. The general formula goes over into the Klein-Nishina formula in the limiting case of low photon density. For the most

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ACCESSION NR: AP4031165

powerful laser now available; the effective cross section is found to be  $\sim 10^{-32}$  cm<sup>2</sup> and can be increased by increasing the focusing of the laser beam. "The author is grateful to V. Arutyunyan and G. Nagorskiy for discussions." Orig. art. has: 37 formulas.

ASSOCIATION: Fizicheskiy institut CKAE, Yerevan (Physics Institute CKAE)

SUBMITTED: 17Oct63

DATE ACQ: 07May64

ENCL: 00

SUB CODE: NP

NR REF SOV: 003

OTHER: 002

Card 2/2



I 31171-65 ENT(1)/EPA(w)-2/EEG(t) Pub-10

ACCESSION NR: AP5005167

8/0022/61/017/006/0129/0135

AUTHOR: Gol'dman, I. I.

TITLE: Dirac electron in the field of a plane electromagnetic wave

SOURCE: AN ArmSSR. Izvestiya. Seriya fiziko-matematicheskikh nauk, v. 17, no. 6, 1964, 129-135

TOPIC TAGS: Dirac particle, electromagnetic wave, plane wave, electron state, positron state, orthogonality

ABSTRACT: The author solves the Dirac equation for the case of an arbitrary plane electromagnetic wave; the solution is based on the use of projection matrices, and thus leads to appreciable simplifications. A physical analysis is made of the solution, and in particular the electronic and positronic states are separated in the solutions. The orthogonality of the system of solutions is proved, in view of the importance of the solution to the calculation of Compton scattering of intense photon beams. The case of a monochromatic wave is considered in conclusion. Orig. art. has: 31 formulas.

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L 34173-65

ACCESSION NR: AP5005167

ASSOCIATION: Fizicheskii institut GKAF, Yerevan (Physics Institute GKAF)

SUBMITTED: 25Mar64

ENCL: 00

SUB CODE: NP, EN

NR REF SOV: 002

OTHER: 005

Cord 2/2

: L 22134-66 EWT(1)

ACC NR: AP6004937

SOURCE CODE: UR/0056/66/050/001/0199/0201

AUTHOR: Gol'dman, I. I.; Tevikyan, R. V.

ORG: Physics Institute GKAE, Yerevan (Fizicheskiy Institut GKAE)

TITLE: Conservation laws for free fields

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 1, 1966, 199-201

TOPIC TAGS: group theory, electromagnetic field, mathematic transformation, quantum field theory, motion equation

ABSTRACT: In connection with a new relation, having the form of a conservation law of a certain tensor composed from the electromagnetic fields, recently derived by D. M. Lipkin (J. Math. Phys. v. 5, 696, 1964) and later generalized by T. A. Morgan (ibid. p. 1659), the authors point out that these relations were proved by directly using Maxwell's equation, and that the group-theoretical nature of these new conservation laws remains unexplained. They therefore show that the usual equations of motion for the free fields can be obtained by variation of some nonlocal Lagrangian. The type of nonlocality remains to a large extent arbitrary. The relations of Lipkin and Morgan and some other relations are shown to be the con-

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L 22134-66

ACC NR: AP6004937

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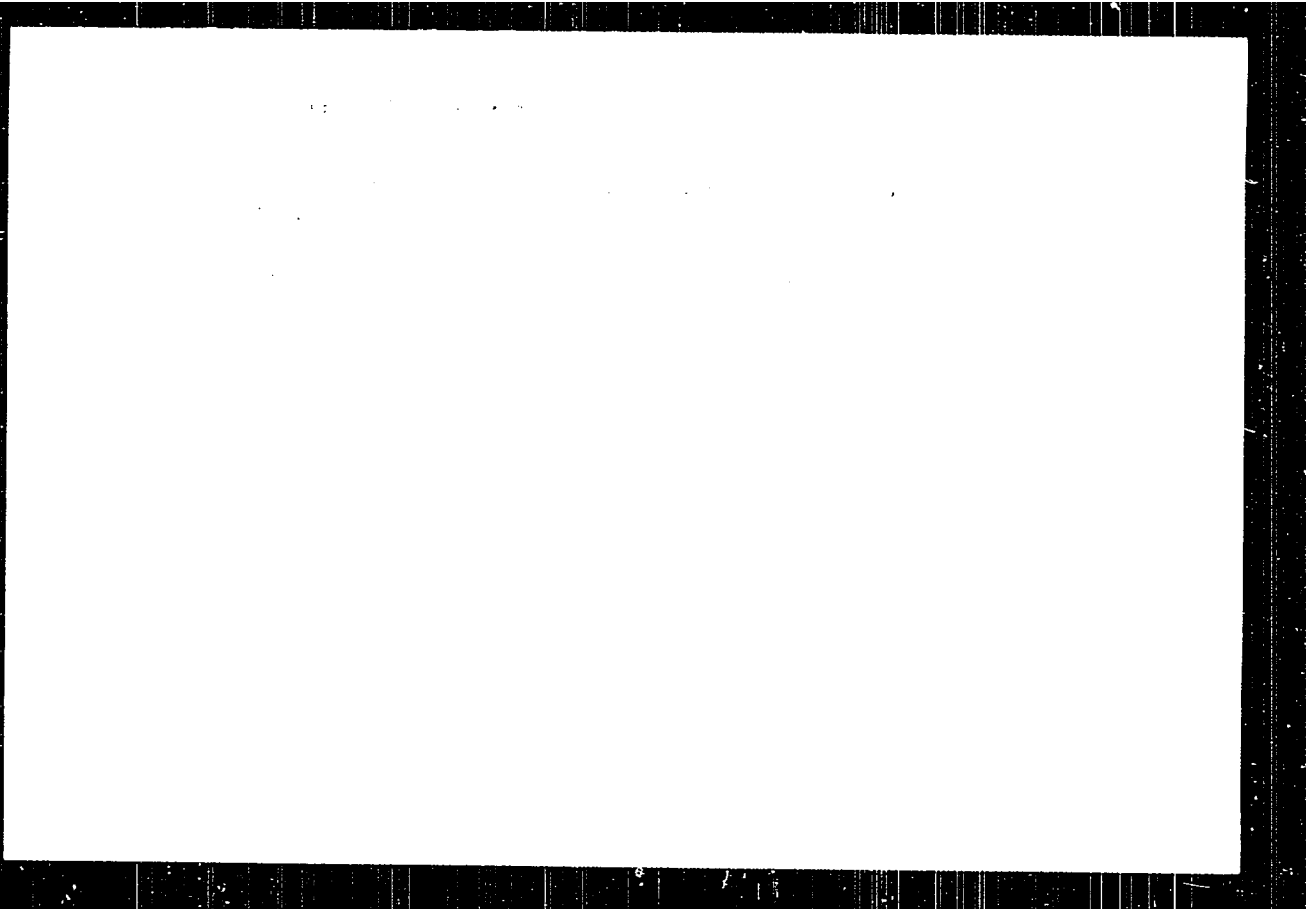
sequence of the invariance of the action integral under the transformations of the group. In this formalism it is immaterial whether the mass of the field particle is zero or nonzero. The results obtained can be generalized to the case of an arbitrary free field. The nonlocal transformations in question form a group. The authors thank A. Ts. Amatuni and V. A. Dzhrbashyan for their interest in the problem and discussions. Orig. art. has: 19 formulas.

SUB CODE: 20,12/ SUBM DATE: 22Jul65/ OTH REF: 003

Card 2/2 BK

"APPROVED FOR RELEASE: 09/24/2001

CIA-RDP86-00513R000515710005-7



APPROVED FOR RELEASE: 09/24/2001

CIA-RDP86-00513R000515710005-7"

GOL'DMAN, I.L. (Moskva)

Influence of polyglucin on hematopoiesis. Pat. fiziol. i eksp.  
terap. 4 no.3:54-60 My-Je '60. (MIRA 13:7)

1. Iz patofiziologicheskoy laboratorii (zav. - chlen-korrespondent  
AMN SSSR prof. N.A. Fedorov) Tsentral'nogo ordena Lenina instituta  
gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen  
AMN SSSR prof. A.A. Bagdasarov).

(POLYGLYKIN--PHYSIOLOGICAL EFFECT)  
(HEMATOPOIETIC SYSTEM)

GOL'DMAN, Igor' L'vovich; KOZINER, V.B., kand.med.nauk, nauchnyy red.;  
GUSAKOVA, A.G., red.; SAVCHENKO, Ye.V., tekhn.red.  
[The atom is a doctor] Atom - vrach. Moskva, Izd-vo "Znanie,"  
1961. 57 p. (MIRA 15:10)  
(ATOMIC MEDICINE)

KOZINER, V.B.; GOL'DMAN, I.L.

Histamine in the blood following transfusion of polyglucin.  
Probl.gemat.i perel.krovi no.5:41-44 '61. (MIRA 14:9)

1. Iz TSentral'nogo ordena Lenina instituta gematologii i pereli-  
vaniya krovi (dir. - deystvitel'nyy chlen AN SSSR prof. A.A.  
Bagdasarov) Ministerstva zdравookhraneniya SSSR.  
(DEXTRAN) (HISTAMINE)



GOL'DMAN, I.L.

Mechanism of the leukopenic reaction to the administration of  
polyglucin. Probl. gemat i perel. krovi 6 no.2:53-58 '61.

(LEUKOPENIA) (DEXTRAN)

(MIRA 14:2)

GOL'DMAN, I.L.

Study of megakaryocytoprogram (on the problem of method in calculating megakaryocytes). Lab. delo 7 no.5:29-33 My '61. (MIRA 14:5)

1. Patofiziologicheskaya laboratoriya (zav. - chlen-korrespondent AMN SSSR prof. N.A.Fedorov) Tsentral'nogo ordena Lenina Instituta gematologii i perelivaniya krovi, Moskva.  
(BLOOD CELLS)

GOL'DMAN, I.L.

Comparative analysis of the leucocytic reaction to the effect of  
polyglucin in the clinic and in an experiment. Biul. eksp. biol.  
i med. 53 no.4:35-38 Ap '62. (MIRA 15:4)

1. Iz patofiziologicheskoy laboratorii (zav. - chlen-korrespondent  
AMN SSSR prof. N.A.Fedorov) TSentral'nogo ordena Lenina Instituta  
gematologii i perelivaniya krovi (dir. - deystvitel'nyy chlen AMN  
SSSR A.A.Bagdasarov [deceased]), Moskva. Predstavlena deystvitel'nyy  
chlenom AMN SSSR V.V.Parinym.  
(DEXTRAN) (LEUCOCYTES)

GOLDMAN, T. L., LIVING, L. H.

Metabolism of antipyrine in man. *Journal of Clinical Pharmacology*, 1971, 11, 1-10.

1. Pharmacokinetic studies of antipyrine in man. *Journal of Clinical Pharmacology*, 1971, 11, 1-10.